TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No. ITL.0258US

In Re Application Of: **Frederick J. Cooper et al.**

Serial No.	Filing Date	Examiner	Group Art Unit
09/430,282	October 29, 1999	P. Tran	2621

Invention: **Controlling Processor-Based Systems Using A Digital Camera**

TO THE ASSISTANT COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on **March 28, 2003.**

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Dated: **April 17, 2003**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant: Frederick J. Cooper et al.	§	Art Unit:	2621
Serial No.: 09/430,282	§	Examiner:	P. Tran
Filed: October 29, 1999	§		
For: Controlling Processor-Based Systems Using A Digital Camera	§	Atty Docket:	ITL.0258US P7494

Board of Patent Appeals & Interferences
Commissioner for Patents
Washington, D.C. 20231

APPEAL BRIEF

Sir:

Applicants respectfully appeal from the final rejection mailed December 31, 2002.

I. REAL PARTY IN INTEREST

The real party in interest is the assignee Intel Corporation.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF THE CLAIMS

Claims 20, 22-25, and 27 are rejected. Each rejection is appealed.

Date of Deposit: April 17, 2003
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Cynthia L. Hayden

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IV. STATUS OF AMENDMENTS

All amendments have been entered.

V. SUMMARY OF THE INVENTION

A processor-based system 10 shown in Fig. 1, includes a digital camera 16 which may be coupled by a tether (not shown) to the housing 12. As illustrated, the camera 16 is positioned to observe the area in front of the processor-based system 10. Thus, the camera 16 detects the user's presence as well as the lighting conditions proximate to the system 10.

Referring now to Fig. 2, light monitoring software 18 stored on the system 10, is responsible for controlling the power consumption state of the processor-based system 10 in response to ambient light. A timer is reset (block 20) and the keyboard and mouse are checked for their current condition (block 22). At diamond 24, a check determines whether the keyboard and mouse have just been used. If so, the timer is again reset. If not, the check at diamond 26 determines whether the timer has expired. If the timer has expired, indicating a period of inactivity exceeding a predetermined time period, a video frame is grabbed as indicated in block 28. In other words, the camera 16 provides a video frame which may be analyzed at block 30. In particular, the luminance value of the frame may be computed at block 30. See specification at page 3, line 24 through page 4, line 21.

A subsampling of the pixels of a frame may be analyzed, for example, approximately 250 pixels in one embodiment of the invention, evenly distributed throughout the frame. Each pixel's luminance value is computed by converting its red, green, blue (RGB) color space value to a hue, saturation and luminance (HSL) color space value using well known techniques. Luminance is the brightness portion of a composite video signal. The pixel luminance values are simply summed and divided by the number of samples. The result is the return luminance value.

Referring to Fig. 3, the software 42 for determining the return luminance value begins by taking the video frame as described previously (see block 44). The pixel stepping for the pre-set sample set, approximately 250 pixel samples in this example, is computed (block 46). The software steps to the next pixel location (block 48). The pixel at the next location has its RGB color space values converted to an HSL format (blocks 50 and 52). The luminance value of the next pixel (from the HSL space) is added to the accumulated luminance total value, as indicated in block 54. If there are more pixels to complete the sample set, the flow iterates. If not, the luminance total is divided by the number of pixel samples as indicated in block 58. The result is then returned to the flow in Fig. 2, as indicated at block 60.

Returning to Fig. 2, next the motion value is computed (block 32). As shown in Fig. 4, software 62 for computing the return motion value begins by taking the video frames from the previous steps (Fig. 2) as indicated at block 64. The pixel stepping for a pre-set number of pixels, for example approximately 250 pixels, is computed, as indicated in block 66. The flow steps through each successive pixel as indicated in block 68. At block 70, the pixel at the new location in the old frame and new frame are accessed. The red value in the old frame is subtracted from the red value in the new frame and this process is repeated for the blue and green values as indicated in block 72. An absolute value of the difference is computed (block 74). See specification at page 4, line 22 through page 6, line 5.

If the result is greater than 50 or some other noise threshold (diamond 76), the result is added to the total motion return value (block 78). At diamond 80 a determination is made as to whether there are additional pixels in the initial set of 250 pixel samples. If not, the motion value is returned (block 82). Otherwise, the flow continues to iterate until all the pixels in the sample have been processed.

Returning again to Fig. 2, at diamond 34 the flow determines whether the returned luminance value differs by more than 40 percent. Of course, 40 percent is merely an exemplary threshold for testing the returned luminance value. If so, a check at diamond 36 determines whether this is the fourth time (or some other number) in a row that the luminance value remained at this level. If so, a check at diamond 38 determines whether motion has occurred during the time period. If not, appropriate changes can be made as indicated in block 40. Among the changes that may be made are to activate a screen saver, implement a power management decision or implement a system utility.

Once the camera 16 is activated, it may capture a frame every second in one embodiment of the invention. The system 10 computes the luminance value for each frame and compares its value to the luminance value computed for a previous frame. If the number is significantly lower than that of previous frames, the software starts to suspect the lights might be out. It keeps capturing frames, computing both a luminance value and a motion value. If the luminance value continues to be low for several frames and the motion value is also low, the computer screen saver and power management mode may be activated. When full power management is turned on, a keyboard or mouse input signal may be used to reactivate the computer. However, the camera 16 can continue to run with the monitors, printers and hard drives powered down, as long as the processor remains on. See specification at page 6, line 6 through page 7, line 14.

The camera continues to capture frames while the computer is in the lower power usage mode or screen saver mode. It compares the frames and computes the luminance value for each frame. If the luminance suddenly increases, the system is immediately returned to full power status and/or the screen saver is deactivated. If the luminance values do not change significantly, and motion occurs for a time period (for example continuously for three seconds), the system

may be returned to full power status and/or the screen saver may be deactivated. See specification at page 7, line 15 through page 8, line 23.

VI. ISSUES

A. Is Claim 20 Obvious Over Ye in View of Choi or Christian?

B. Is Claim 22 Obvious Over Ye in View of Choi or Christian?

C. Is Claim 23 Obvious Over Ye in View of Choi or Christian?

VII. GROUPING OF THE CLAIMS

Claims 24, 25, and 27 may be grouped with claim 20.

VIII. ARGUMENT

A. Is Claim 20 Obvious Over Ye in View of Choi or Christian?

Claim 20 calls for a method of controlling a processor-based system including analyzing video information, developing information about the luminance level of the video information, and controlling the power consumption state of the system based, at least in part, on the luminance information. Thus, one element of the claim is using luminance level to control the power consumption state of a processor. This clearly is not taught in either reference or their combination.

For example, in paragraph 1, the Examiner argues that Ye teaches using information to detect any movement in front of the camera and then control the power consumption state of the computer. But, certainly, this does not suggest using luminance level to control the power consumption state of the computer.

The Examiner further argues that both Choi and Christian teach that it is known to determine a luminance value from a video information. But, even if this is so, again, there is no suggestion of using the luminance level of video information to control the power consumption state.

Nothing in any of the references in any way suggests using the luminance level of the video information to control the power consumption state. Just because people know to detect luminance level does not in any way suggest using luminance level of video information to control the power consumption state. Similarly, just because someone uses different video information, namely movement, to control the power consumption state, this, again, simply does not in any way suggest using the luminance level to control the power consumption state.

Therefore, the rejection of claim 20 should be reversed.

B. Is Claim 22 Obvious Over Ye in View of Choi or Christian?

Claim 22 is dependent on claim 20 and calls for controlling the operation of a screen saver based on said luminance information. Nothing in any of the cited references has anything to do with this claim limitation.

Therefore, the rejection of claim 22 should be reversed.

C. Is Claim 23 Obvious Over Ye in View of Choi or Christian?

Claim 23 is dependent on claim 20 and calls for controlling the operation of system utilities based on the luminance information. Again, nothing in any of the cited references has anything to do with controlling system utilities.

Therefore, the rejection of claim 23 should be reversed.

IX. CONCLUSION

Applicants respectfully request that each of the final rejections be reversed and that the claims subject to this Appeal be allowed to issue.

Respectfully submitted,

Date: 4/17/03

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APPENDIX OF CLAIMS

The claims on appeal are:

20. A method of controlling a processor-based system comprising:

receiving video information;

analyzing said information to develop information about the luminance level of said video information; and

controlling the power consumption state of said system based at least in part on said luminance information.

22. The method of claim 20 further including controlling the operation of a screen saver based on said luminance information.

23. The method of claim 20 further including controlling the operation of system utilities based on said luminance information.

24. The method of claim 24 including determining whether the video information indicates motion.

25. An article comprising a medium for storing instructions that enable a processor-based system to:

analyze video information to develop luminance information; and

control the power consumption state of said system based at least in part on said luminance information.

27. The article of claim 25 further storing instructions that cause a processor-based system to determine whether the video information indicates motion.